

TABLE 2

**GROUNDWATER MONITORING SYSTEM
INSPECTION**

Well Designation _____
 Date of Inspection _____ (month/day/year)
 Time of Inspection _____
 Inspector's Name(s) _____

<i>Item</i>	<i>Types of Problems</i>	<i>*Status</i> <i>U A</i>	<i>Comments</i>	<i>Action</i>	<i>Date</i>
Well Condition	Flagging Visibility (if applicable) Well Number Readable on Outer Casing Integrity of Surface Seal/Apron Integrity of Surface Casing Corrosion Inner Casing/Screen Integrity Measuring Point Visibility Recharge Rate Other				
Security	Security Cap in Place Lock in Place Lock Functional Other				

*Status: U = unacceptable
 A = acceptable

(1) Hydraulic Monitoring

At a minimum, the following monitoring wells shall be used to monitor the hydraulic effectiveness of the Corrective Measures.

Bedrock Groundwater - (D-Zone, C-Zone, B-zone) These wells shall be monitored no less than quarterly.

Wells OW 415, OW416, OW417, OW400, OW401, OW402, OW403, OW404, OW405, OW406, OW407, OW408, OW409, OW410, OW411, OW660, OW661, OW662, OW663, OW664, OW665, OW666, OW667, OW668, OW653, OW659, OW658, OW652, OW657, OW649, OW651, OW654, and NYPA139. The Niagara River and NYPA 139 will be monitored at the beginning and end of each event.

Overburden Groundwater – These wells shall be monitored no less than quarterly.

Wells BH8-89, WS4A, OW571, OW572, OW301, OW570, OW569, OW300, OW316, WS7A, OW668, OW657, BH7-89, OW566, OW565, OW564, OW314, WS10A, OW358, OW563, OW562, OW273, OW313, WS107, OW556, OW555, EB Drain, OW309, OW554, and OW553.

These wells shall be monitored annually.

Wells OW302, OW303, WS122, OW319, OW318, OW304, OW559, OW317, OW305, OW327, OWG6, OW328, OWG8, WS25A, OW306, OW557, BH1B-88, WS111, WS23A, OW310, and BH4-88.

Hydraulic containment will be evaluated by use of potentiometric surface maps derived from "point in time" data. The hydraulic monitoring program must be capable of distinguishing changes in the potentiometric surface which have resulted from implementation of the Corrective Measures from background changes unrelated to the Corrective Measures (such as changes induced by fluctuations in the Niagara River level or surcharging of the NYPA Forebay Canal). Monitoring may involve both instantaneous and continuous water level monitoring.

(2) Chemical Monitoring

At a minimum, the following monitoring wells shall initially be used to monitor changes in overburden and bedrock groundwater chemistry at the site.

Over time, it is anticipated that changes in the hydraulic and chemical monitoring program will be appropriate. Any changes to the program require written authorization of the Department.

Bedrock Groundwater - (D-Zone, C-Zone, B-zone)

Wells: OW403, OW407, OW408, OW409, OW410, OW649, OW651, OW652, OW653, OW654, BEW700, BEW701, BEW702, BEW703, BEW704, BEW705, and BEW706.

Initially, the Bedrock wells shall be sampled semiannually for a subset of the Site Specific Indicator Parameters (See Table 4.5 in "Bedrock Groundwater Remediation Design Report (30 Percent Completion)).

Overburden Groundwater –

Wells: OW559, OW558, OW557, OW307, OW555, OW554, MW-2, OW553, OW310, OW269, OW270, OW273, OW314, OW565, OW567, OW300, OW560, OW303, OW304, WW1, WW2, and EBDTS.

Initially the Overburden wells shall be sampled annually for a subset of the Site Specific Indicator Parameters (see Table 3.2 in "Flow Zone 1 Design Report (30 Percent Completion)).

(3) Sewer Monitoring

At a minimum, OCC shall carry out Outfall and Sanitary sewer monitoring programs to verify that unacceptable discharges of hazardous waste constituents to the sewers is not occurring. The monitoring programs for the outfall and sanitary sewers are specified in SPDES Permit No. NY0003336 and City of Niagara Falls Significant Industrial User Wastewater Discharge Permit No. 22, respectively. A summary of the monitoring results for both the outfall and sanitary sewers will be submitted annually.

(4) Biomonitoring

Since 1980, the Ontario Ministry of Environment, in cooperation with the New York State Department of Environmental Conservation, has conducted the "Niagara River Mussel Biomonitoring Program". Under that program, caged mussels have been deployed at a variety of locations in the Niagara River basin, including the vicinity of the OCC Buffalo Avenue Plant. Biomonitoring is an effective means of detecting bioaccumulative contaminants in the water when ambient concentrations are too low to be measured directly using conventional water sampling and analytical methods.

The results of that ongoing monitoring program indicate that the mussels from the vicinity of the OCC Buffalo Avenue Plant contain trace concentrations of organochlorine pesticides and PCBs, chlorinated benzenes and toluenes. If future biomonitoring data indicate that facility represents and unacceptably large source of those constituents to the Niagara River, the Department may initiate a Permit Modification that would require OCC to perform additional investigations to

evaluate whether groundwater contamination is the source of the contamination, and to take remedial actions as appropriate.

G. Reporting

- (1) System Down Time - The remedial system shall be operated on a continuous basis. If any part of the system which affects the ability of the system to achieve the remedial intent is inoperable (down) for a period of more than 3 days consecutively or 5 days in a calendar month, OCC shall notify the Department. The notification will include a plan for restoring system operation as quickly as possible.
- (2) Quarterly Reports - Each October, January, April, and July, OCC shall submit a written report containing groundwater elevation information collected during the previous quarter's sampling programs. Data shall be provided as hard copy and in an acceptable digital format (such as DOS 6.0, 3.5 inch floppy disk ASCII, delimited format, DBF format, etc.) for input into the Department's computers. These reports shall contain groundwater potentiometric surfaces and groundwater quality information collected during the March and September sampling programs as appropriate. In addition, these reports shall summarize system operation data for the previous quarter including average pumping rates from each well/ collection trench, the cause and duration of system upsets requiring notification, corrective action taken or to be taken to resolve recurrent operational difficulties.
- (4) Annual Reporting - Annually the Permittee shall submit a summary report of all sampling results obtained during the preceding year. The Annual Report shall be due by April 1 of each year and shall contain a summary of all data and evaluations as required for quarterly reports.

In addition, the following information shall be contained in the Annual Report:

- (a) The Permittee shall determine the groundwater flow rate and direction. [6 NYCRR 373-2.6(i)(5)].
- (b) Proposal for any changes to the Groundwater Monitoring Plan.

H. Modification of the Remedial System

If, after review of the performance monitoring data, the Department determines that the design or Operation of the Remedial System is not sufficient to achieve the remedial

criteria, the Department may require OCC to modify the design or operation of the system so as to achieve the remedial criteria.

OCC may implement, without prior Department approval, adjustments to the groundwater recovery system that will facilitate or improve groundwater control and cleanup. Modification of the groundwater treatment system may only be made after receipt of written approval by the Department.

(1) Termination of Groundwater Recovery

Because cleanup of the facility will not be feasible for the foreseeable future and because containment of the hazardous waste constituents is necessary for protection of human health and the environment, it is the Department's position that the specified remedial systems, or other equivalent systems, must be operated and maintained in perpetuity. OCC must petition the Department for approval to shut down a groundwater recovery system and/or well. The petition must include supporting information that justifies why the system and or well is no longer necessary to achieve the remedial goals and criteria established herein.

J. Financial Assurance

By July 31, 1999 OCC must update the Closure/Post Closure Cost estimate for the facility to include sufficient financial assurance to provide for the perpetual operation and maintenance of the Corrective Measures specified above. OCC shall use 3.85 % as the discount rate used in determining the present net value of the cost of perpetual operation and maintenance of the system. OCC shall also assume that the useful life of all tanks, wells, pipes and ancillary equipment associated with the operation and maintenance of the Corrective Measures is no greater than 30 years.

The Department may require OCC to increase the amount of financial assurance if the Department's estimates of the costs for perpetual care described above exceed those provided by OCC.

K. Health and Safety Plan

OCC shall follow the Corrective Action Program Health and Safety Plan (HASP) dated November 1995 that describes the health and safety requirements and general procedures to be followed to adequately protect workers at the Facility and the surrounding community during the remedial program. OCC shall insure that the Department receives any updates to the HASP.

L. Reservation of Rights

Nothing herein shall constitute a waiver of, and this Permit is without prejudice to, past and/or future rights, claims or defenses of any kind under the laws, statutes or regulations

of the United States, the State of New York or common law by either the State or the Permittee, including, without limitation, claims or defenses under any applicable federal, state, or common law regarding damages for injury to, destruction of, or loss of natural resources relating to the release or threatened release of hazardous substances and/or other wastes at, from, and/or in connection with the Main Plant, and the costs of assessing such injury to, destruction of, or loss of natural resources.

2583 (158) JAN 23/95(W) REV.1 (P807)

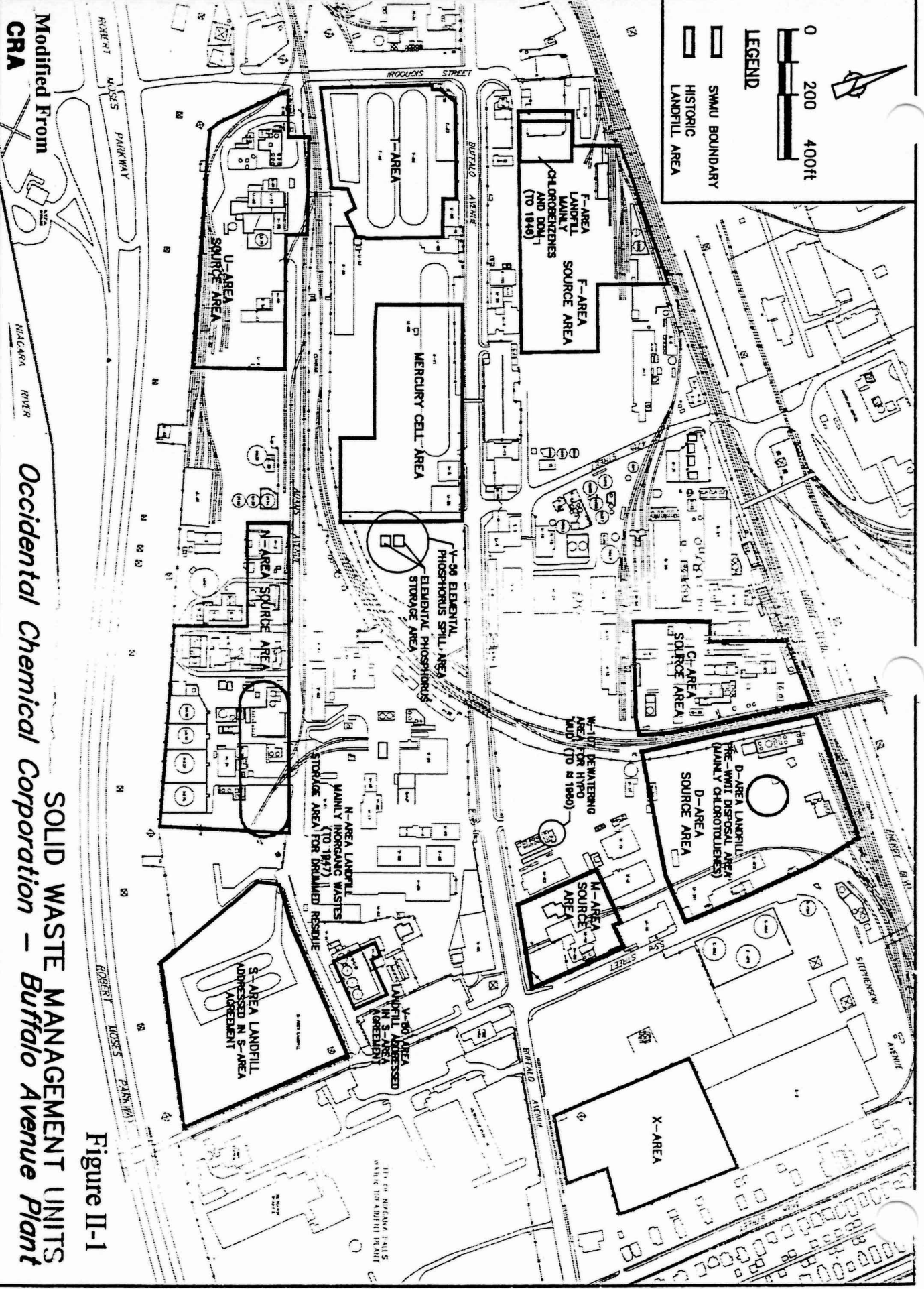


Figure II-1

SOLID WASTE MANAGEMENT UNITS
Occidental Chemical Corporation - Buffalo Avenue Plant

Modified From
CRA

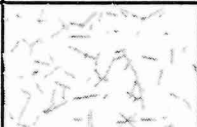
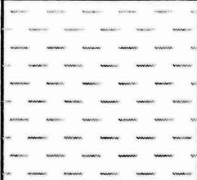
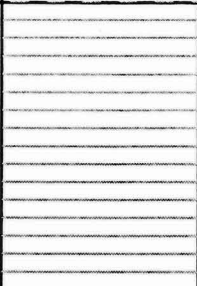
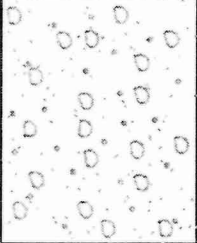
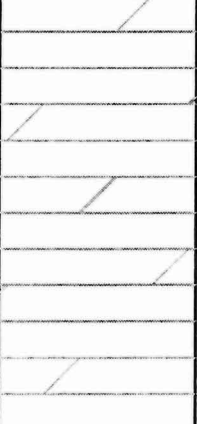
FORMATION	COLUMNAR SECTION	THICKNESS IN FEET	CHARACTER
FILL		0-15	GRAVEL, SAND, SILT AND CLAY, DEMOLITION DEBRIS, FLYASH, CINDERS, CHEMICAL WASTE
ALLUVIUM		0-15	LIGHT BROWN SILT AND VEGETATION, GRADING INTO THIN BLACK AND DARK BROWN SILTY SAND, GRADING INTO BLACK IN THE LOWER PART
GLACIOLACUSTRINE CLAY		0-15	RED BROWN SILTY CLAY AND GRAY BROWN SANDY TO CLAYEY SILT
TILL		0-15	RED BROWN SANDY SILT, TRACE TO SOME CLAY AND GRAVEL
BEDROCK			LOCKPORT DOLOMITE

Figure II-2

OVERBURDEN STRATIGRAPHY

Modified

From *Buffalo Avenue Plant – Occidental Chemical Corporation*
CRA

AVERAGE THICKNESS
OF BEDROCK ZONES (ft.)

PERCENT OF FLOW

AVERAGE THICKNESS
OF BEDROCK LAYER (ft.)

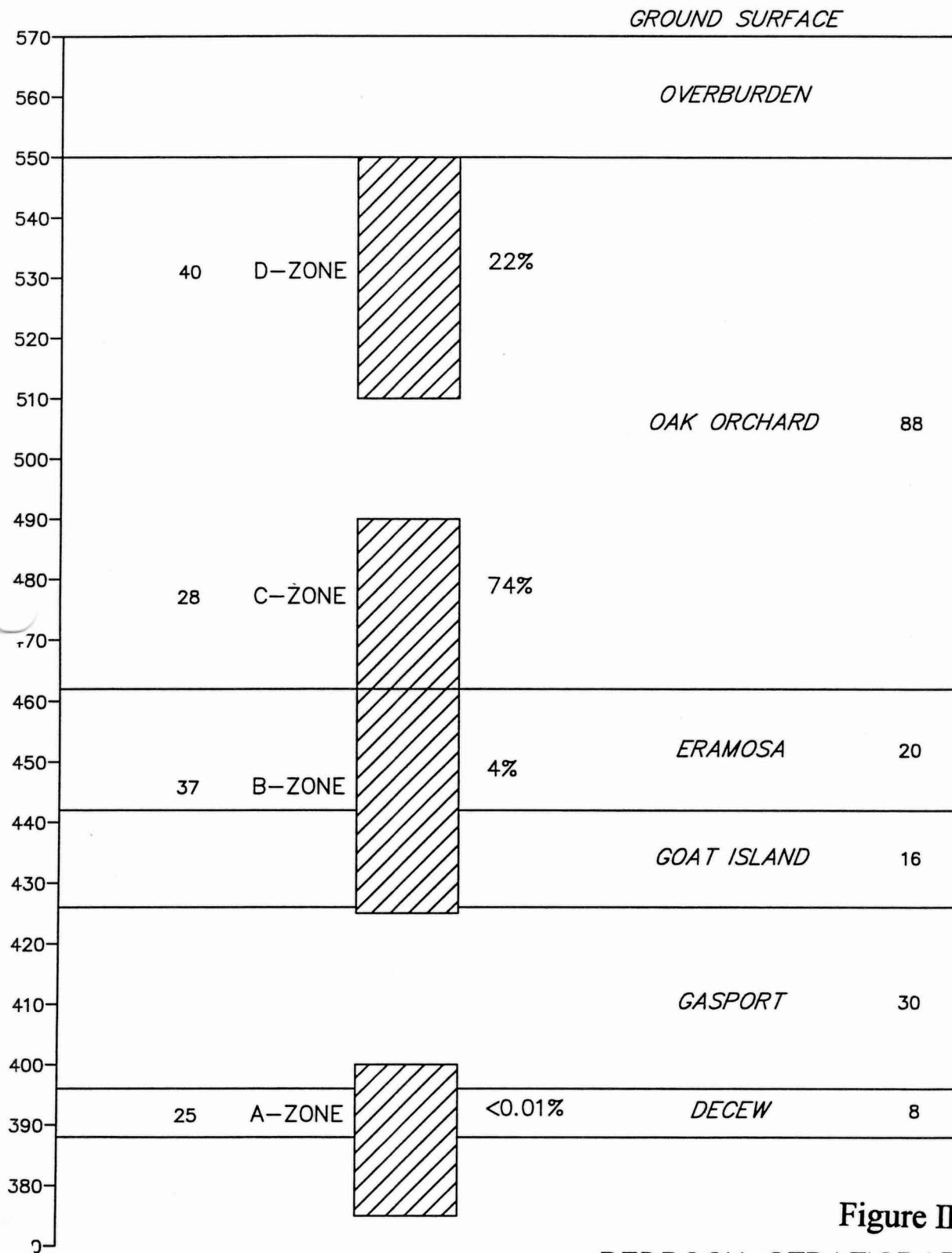
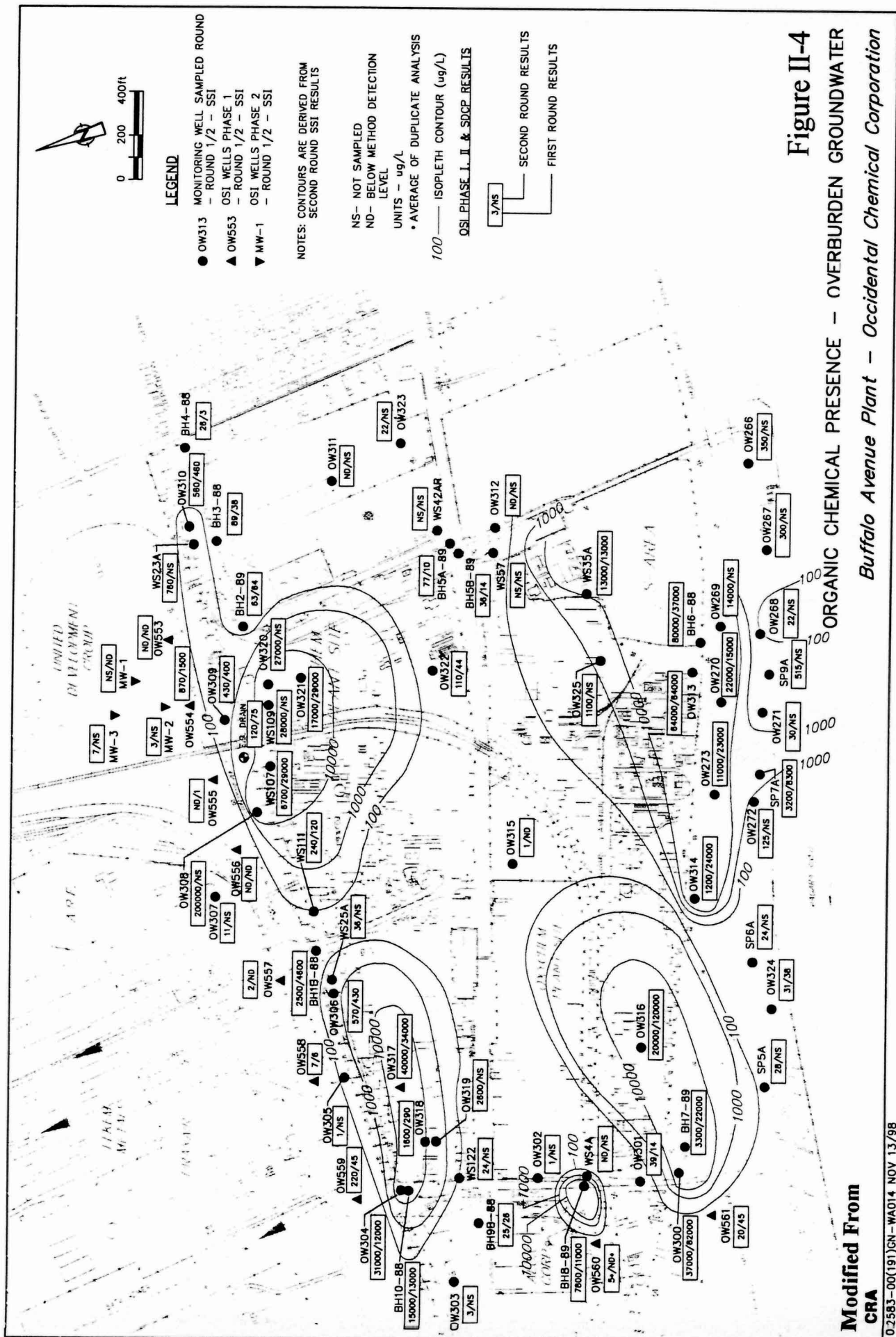


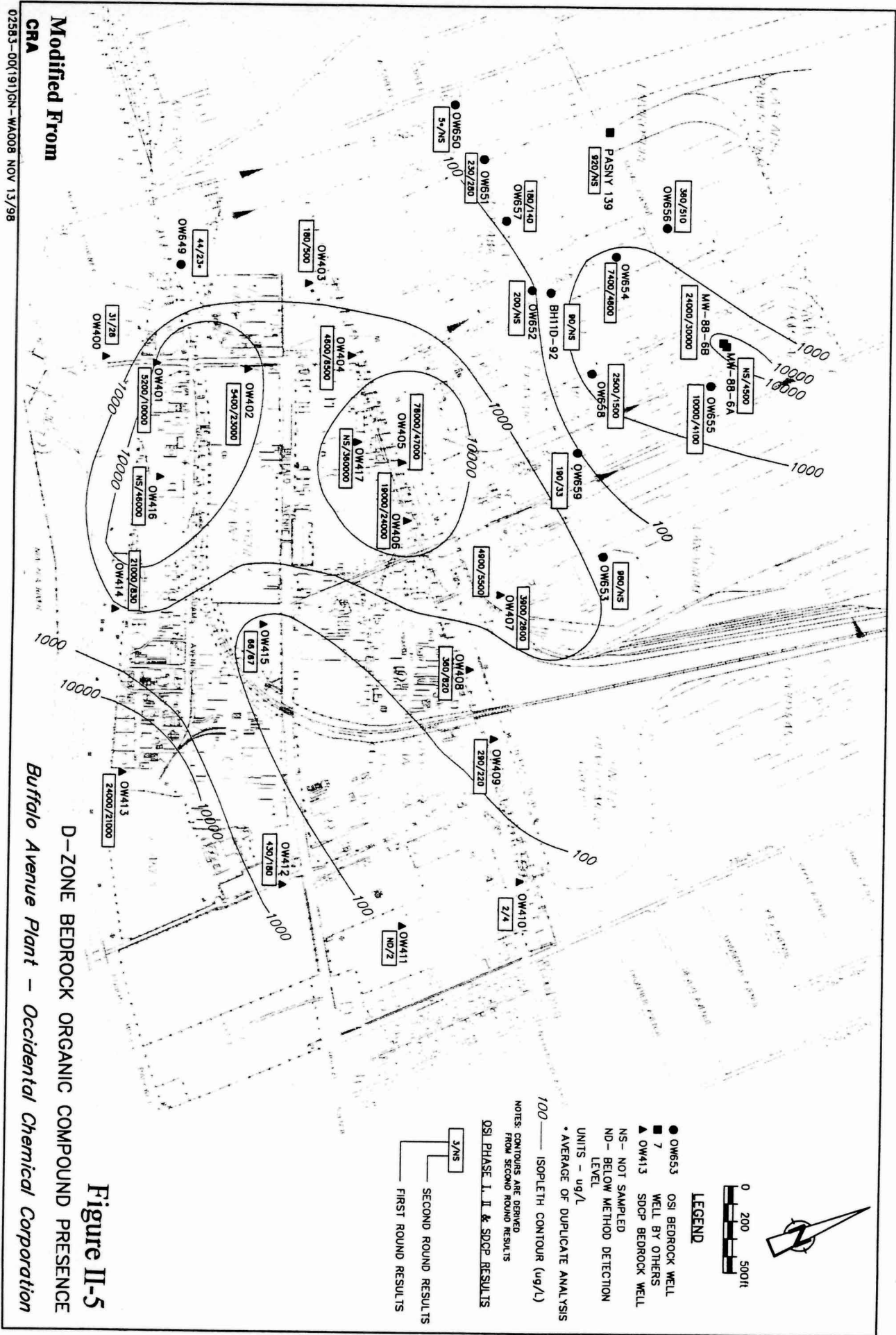
Figure II-3

BEDROCK STRATIGRAPHY

Modified

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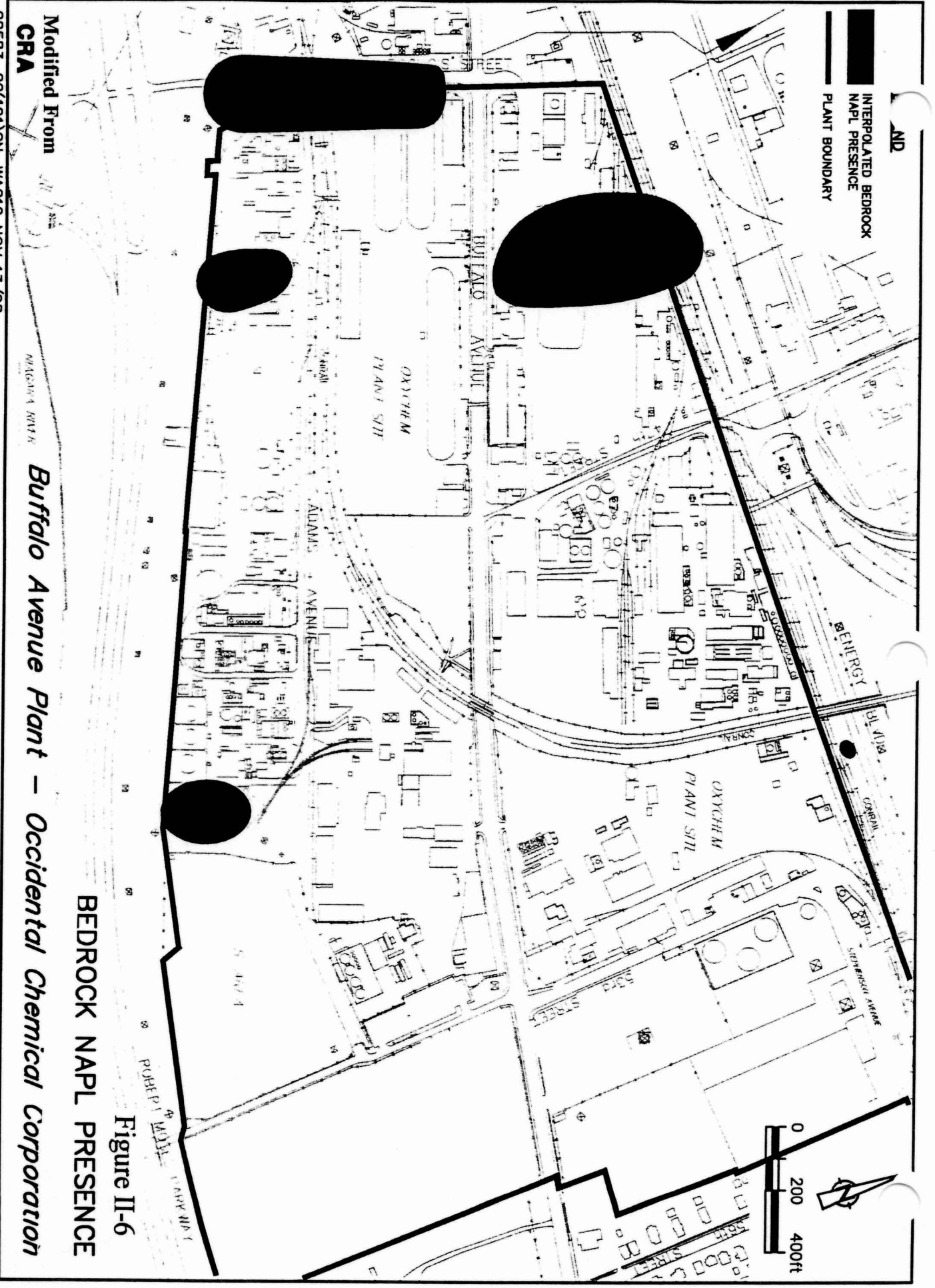
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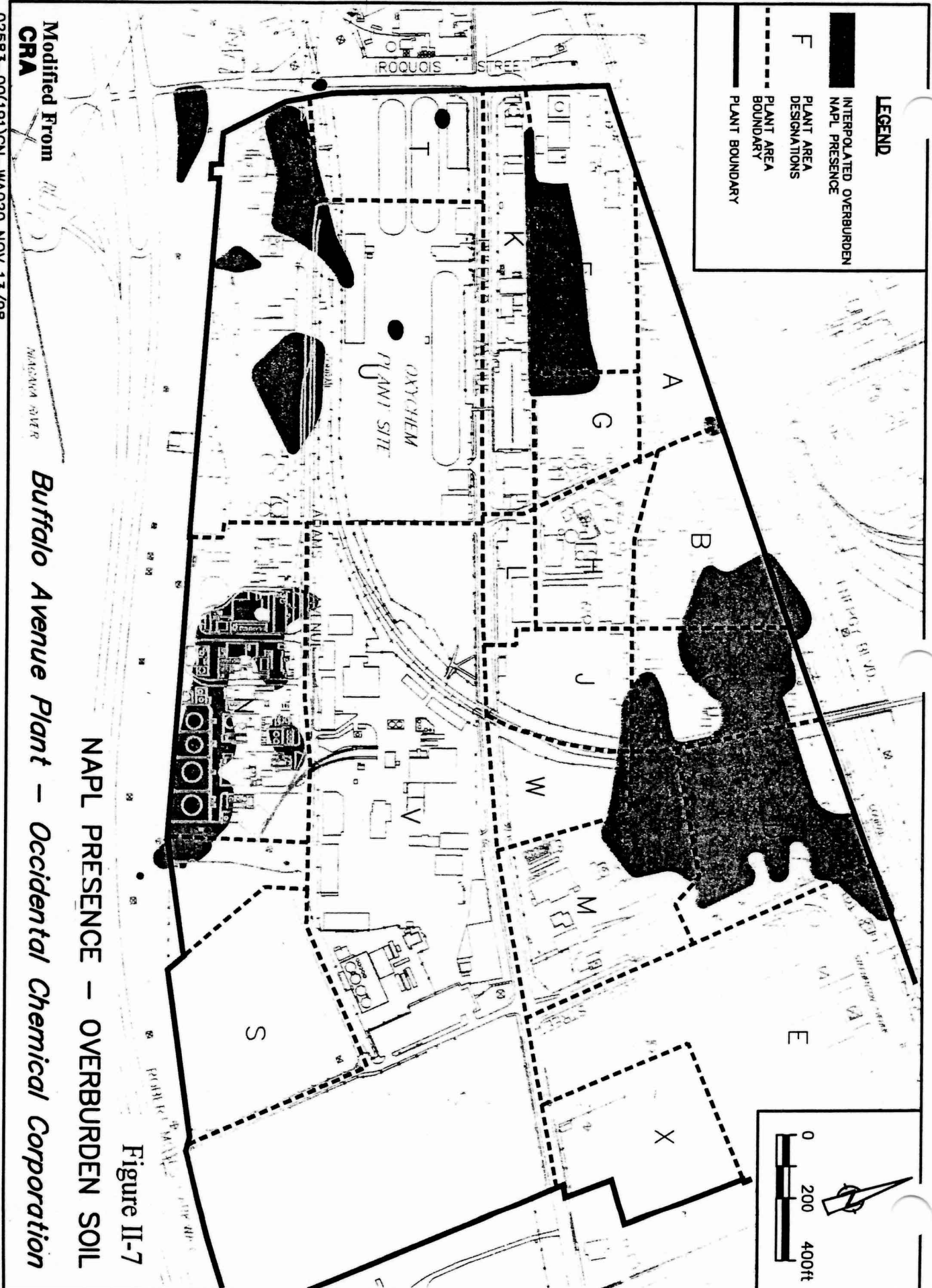
NOT TO SCALE

Buffalo Avenue Plant - Occidental Chemical Corporation

BEDROCK NAPL PRESENCE

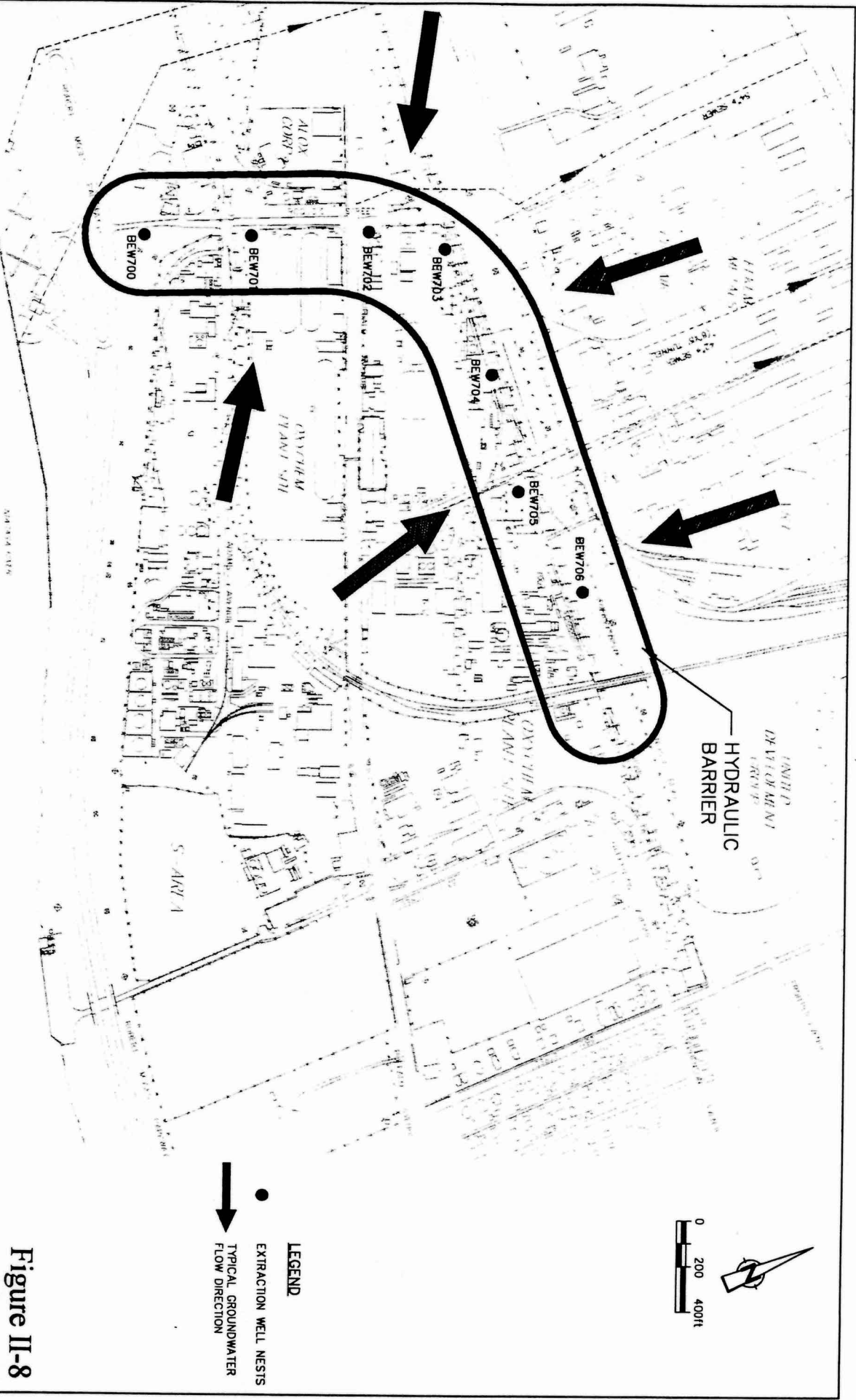
Figure II-6

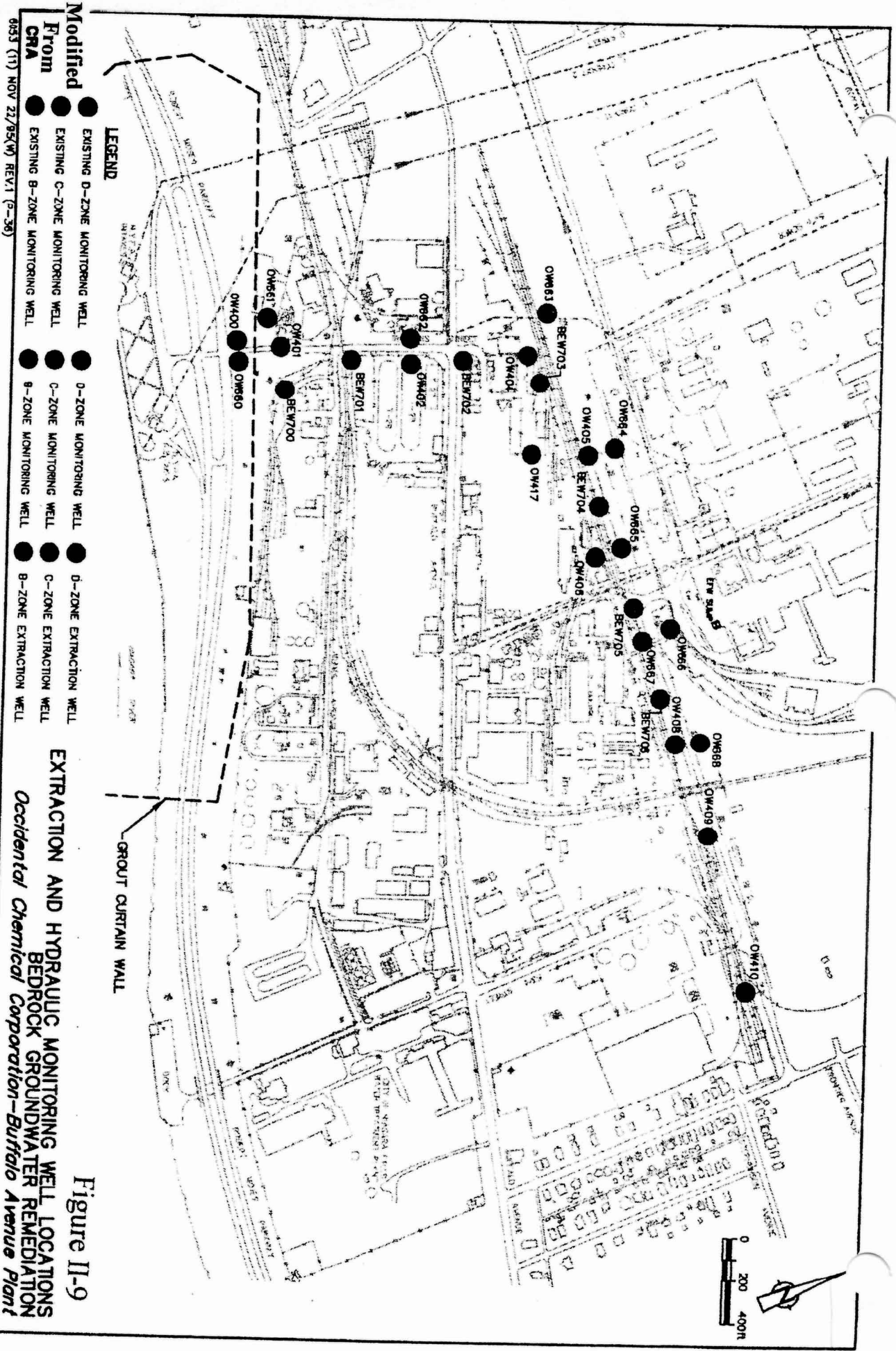




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BEDROCK GROUNDWATER HYDRAULIC CONTAINMENT
Buffalo Avenue Plant – Occidental Chemical Corporation





LEGEND

- ▲ OW414A SDCP BEDROCK WELLS MONITORED FOR NAPL PRESENCE
- ▣ OW417A LOCATIONS PUMPED DURING A-WELL NAPL ICM

From
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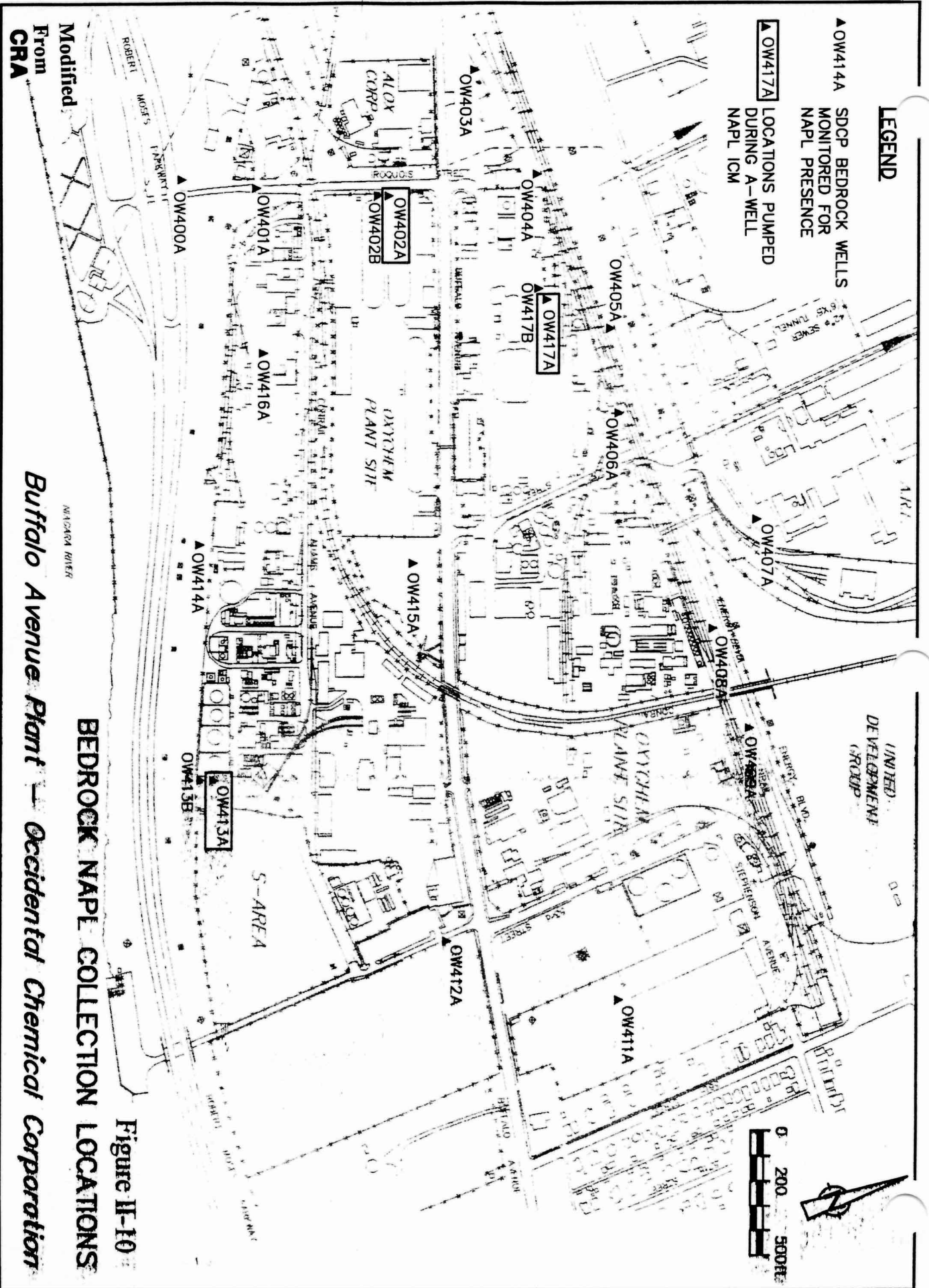
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02583-00(191)GN-WA039 NOV 13/98

Buffalo Avenue Plant — Occidental Chemical Corporation

BEDROCK NAPL COLLECTION LOCATIONS

Figure II-10



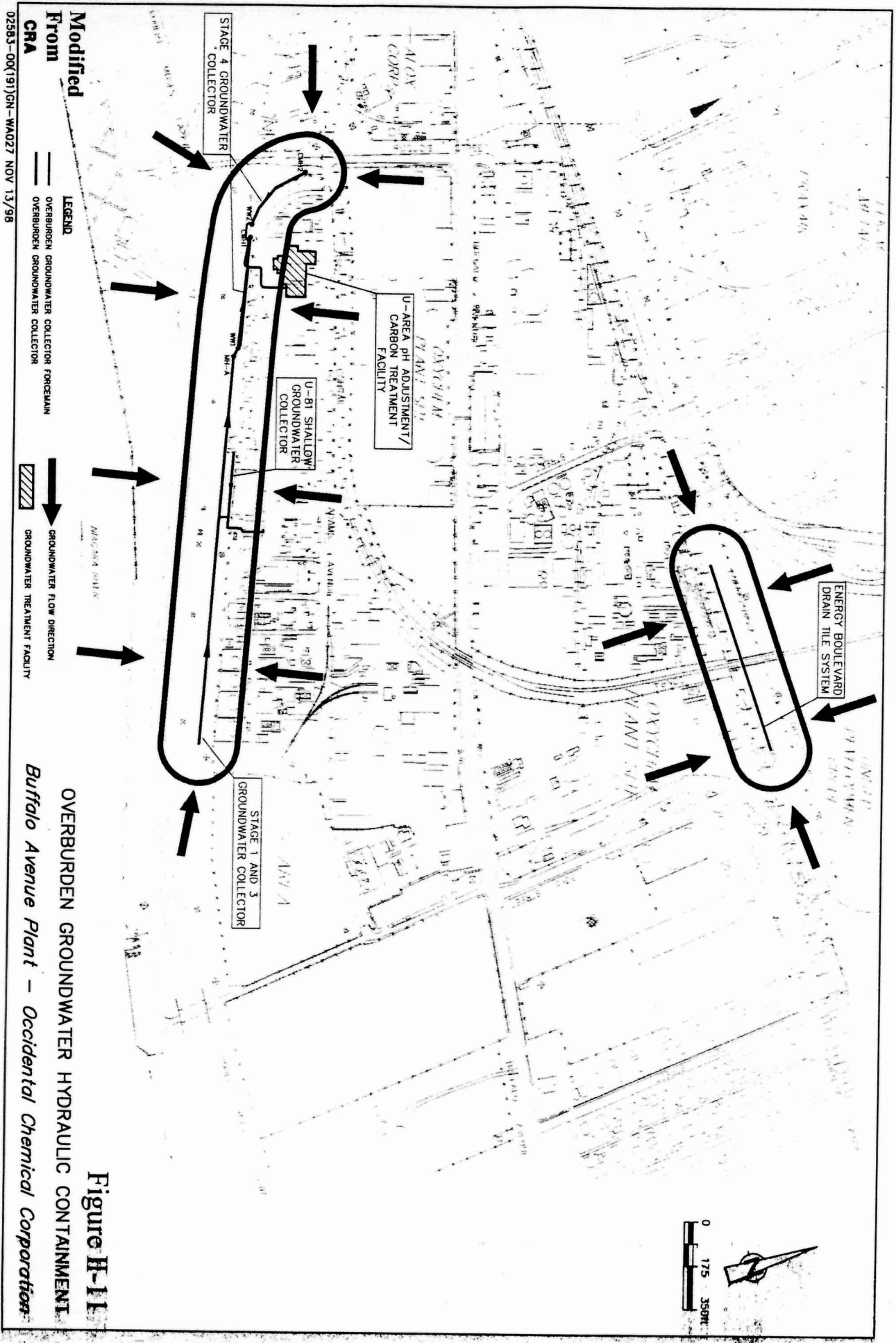
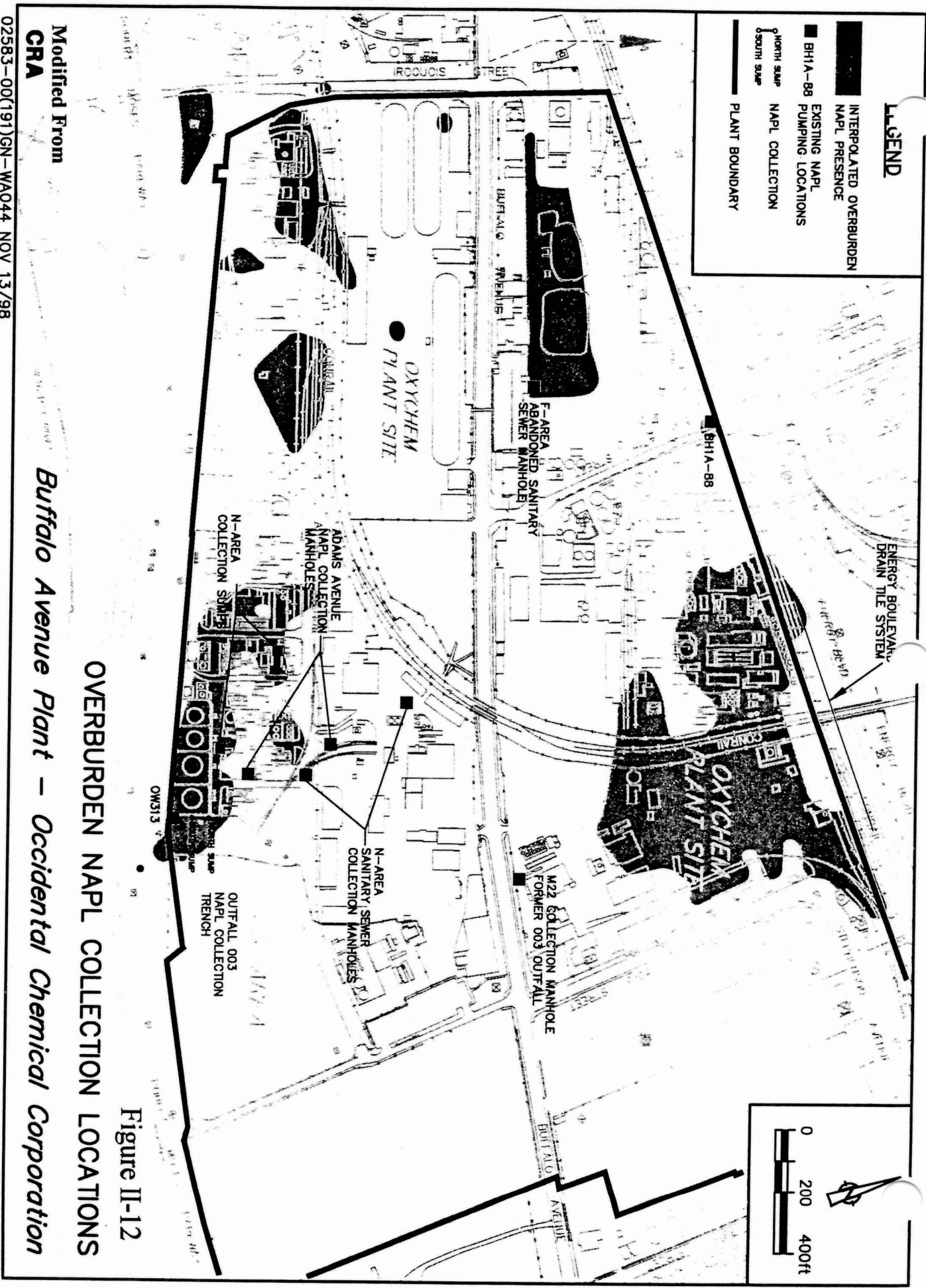


Figure H-11
OVERBURDEN GROUNDWATER HYDRAULIC CONTAINMENT
Buffalo Avenue Plant - Occidental Chemical Corporation

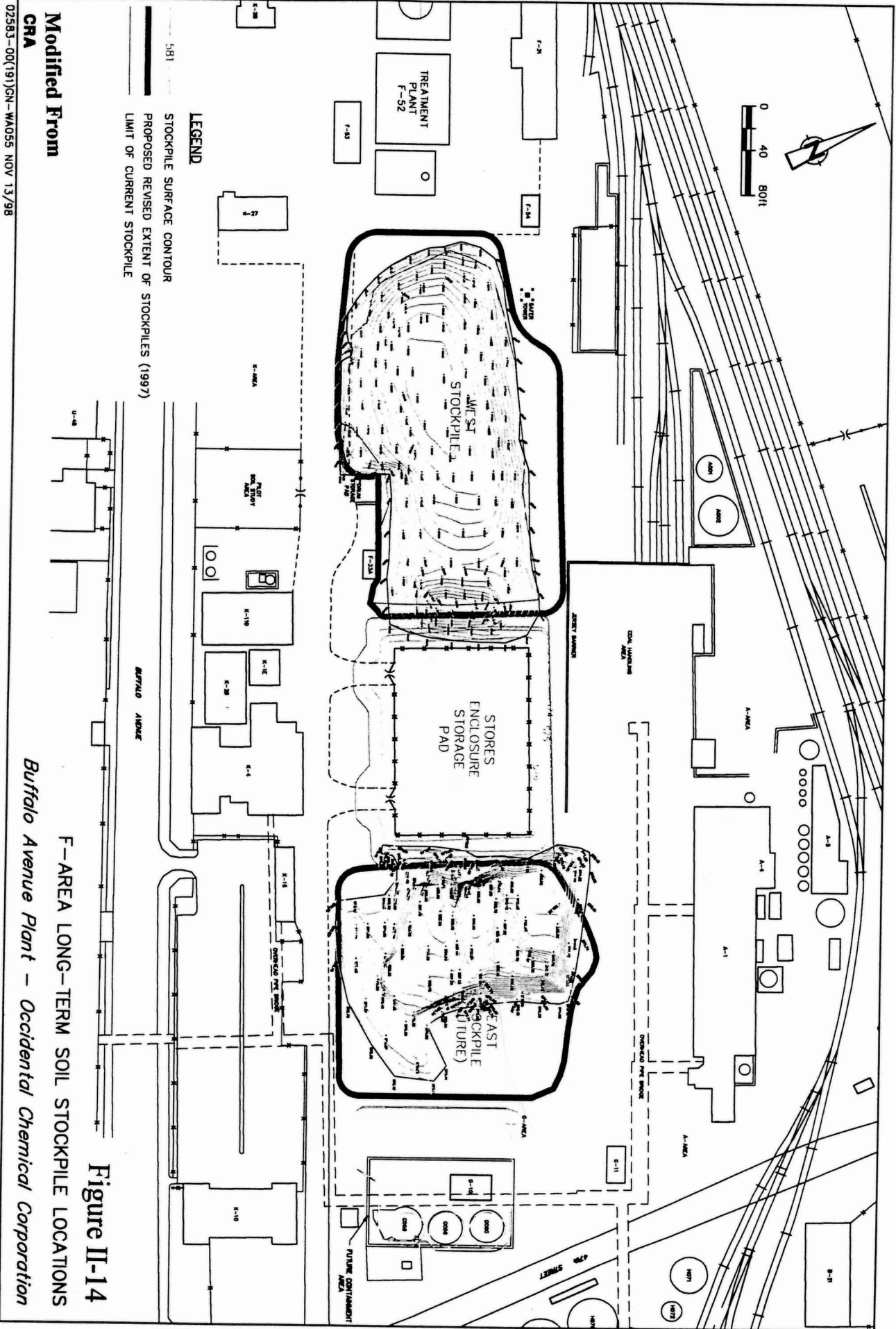


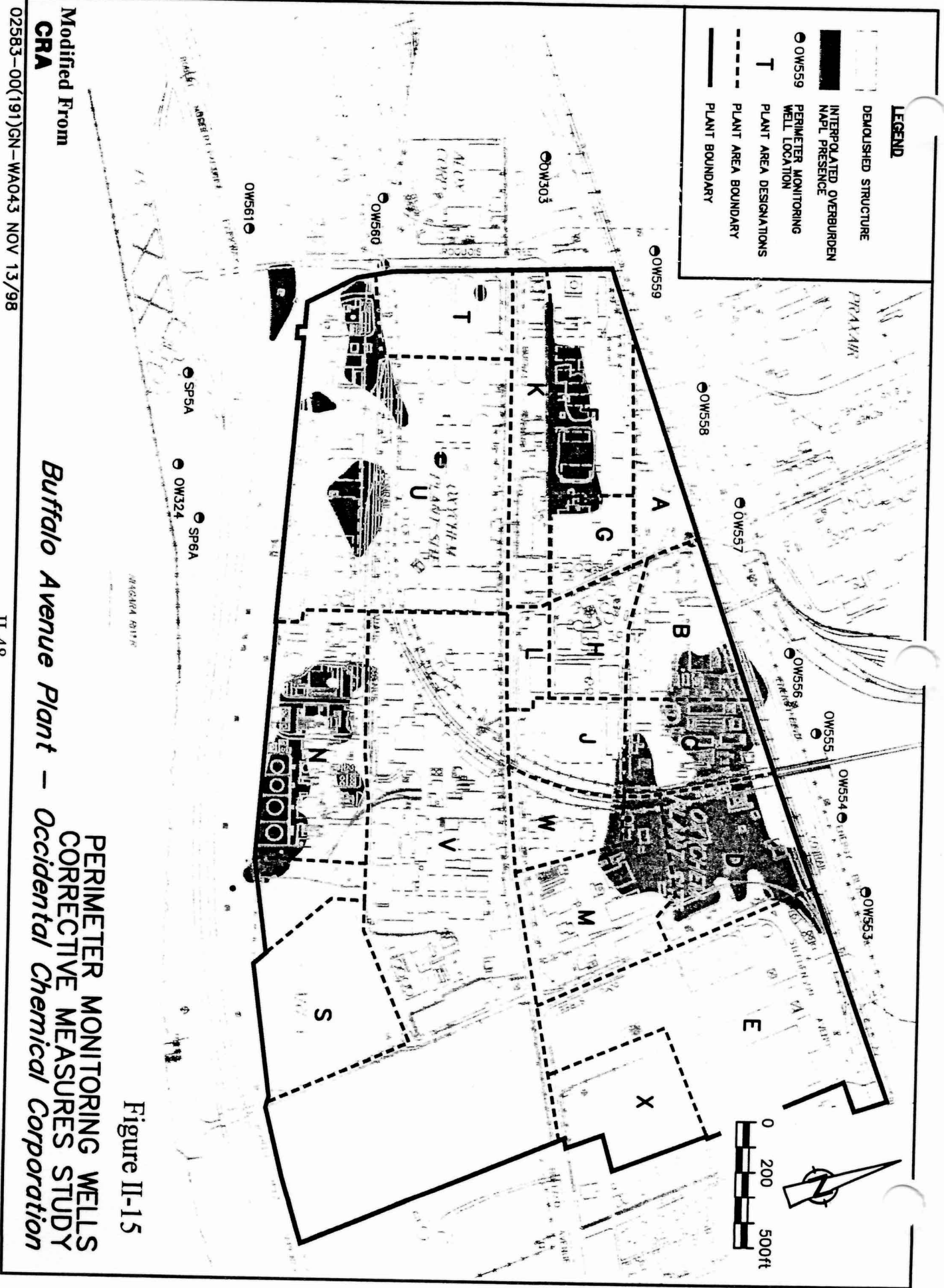
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OVERBURDEN NAPL COLLECTION LOCATIONS
Buffalo Avenue Plant – Occidental Chemical Corporation

Figure II-12

02583-00(191)GN-WA044 NOV 13/98





July 2, 1999

MODULE III - STORAGE IN CONTAINERS

A. AUTHORIZED STORAGE AREA, WASTE TYPES AND STORAGE VOLUME

The Permittee may operate the following container storage areas at the facility, and store the following types of hazardous wastes in containers in these areas up to the volumes as specified in Table III-1 of this module and Attachment D, subject to the terms of this Permit as listed.

The requirements of these Modules supersede any conflicting requirements in any Attachments of this permit.

The Permittee must comply with 6NYCRR 373-2.9 as cited below and with the portions of Attachments A, B, D, H and I incorporated by reference into this Permit.

- (1) The Permittee may accept hazardous wastes from facilities listed below and store them in containers at the facility subject to the terms of this Permit. Restrictions on the waste types that can be stored in each permitted area, container volumes and maximum numbers of containers are specified in Attachment D and Table III-1.
 - (a) Process wastes collected and generated on-site.
 - (b) Soils and other wastes collected and generated within and surrounding the Niagara Plant.
 - (c) Soils, spent activated carbon, sampling debris, and other wastes from OCC associated remedial sites in Western New York.
 - (d) Large debris (e.g., tires, concrete, etc.) generated during excavation of soils and sediments at OCC associated remedial sites in Western New York.
 - (e) Liquid wastes generated during remedial activities at OCC.
 - (f) Wastes generated by contractors from the storage of OCC products

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for OCC in the NOCO Energy Corporation storage site.

- (g) Wastes identified pursuant to the PCB trial burns described in the PCB Trial Burn Report located on or adjacent to OCC productions in Taft, Louisiana.
- (h) The segregatable portion of wastes from multi-generator disposal sites which were generated at the OCC facilities identified in (b) through (g) above.
- (i) All wastes identified in (b) through (g) above generated as a result of integrated remedial activities undertaken at multigenerator disposal sites which are presently the subject of litigation before the U.S. District Court for the Western District of New York between EPA and/or New York State and OCC.

The Western New York sites generating the above remedial wastes include the Hyde Park landfill; the "S-Area" landfill and other sources at the OCC Buffalo Avenue, Niagara Falls plant; the 102nd St. landfill; the OCC Durez plant; and Love Canal.

These wastes may be stored in areas listed in Table III-1.

- (2) If any new hazardous waste streams, having the EPA hazardous waste codes in Table III-1, but not described in Attachment A are to be stored in any permitted area, the Permittee is to notify the DEC Environmental Coordinator before this is to occur, and will include the following information:
 - (a) that the new hazardous waste is compatible with the container material and a determination, as made by a chemist and approved by a supervisor, that this waste is compatible with other waste streams stored in the area;
 - (b) the waste profile including analysis, when available, or if applicable, process knowledge in accordance with procedures described in the Waste Analysis Plan may be substituted; and

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- (c) the date this will start. If storage is required due to an emergency situation (e.g., a spill of product) then the Permittee may waive the pre-notification requirement, but shall notify the Environmental Coordinator as soon as practicable.

Notifications shall be included in the monthly report submitted to the Department, as required by Module V, Condition E.2.

If this material is to be ultimately incinerated on-site, then this information will be submitted in conjunction with the information to be submitted as detailed by the Supplementary Approval procedure in Attachment F.

- (3) If any new hazardous waste streams not having the EPA hazardous waste codes in Table III-1 are to be stored in any permitted area, the Permittee must seek a permit modification before this is to occur. This request for a modification will be in accordance with 373-1.7, and will also include the following information:
 - (a) the compatibility of the new hazardous waste with the container material and with other waste streams stored in the area;
 - (b) the waste profile including analysis when available, or if applicable, process knowledge in accordance with procedures described in the Waste Analysis Plan may be substituted; and
 - (c) the expected volume of waste to be stored and the date this will start; and
 - (d) the applicable EPA waste codes.
- (4) If any new solid waste streams not described in Attachment A are to be stored in any permitted area, the Permittee is to notify the DEC Environmental Coordinator before this is to occur, and will include the following information:
 - (a) that the new hazardous waste is compatible with the container material and a determination, as made by a chemist and approved by a